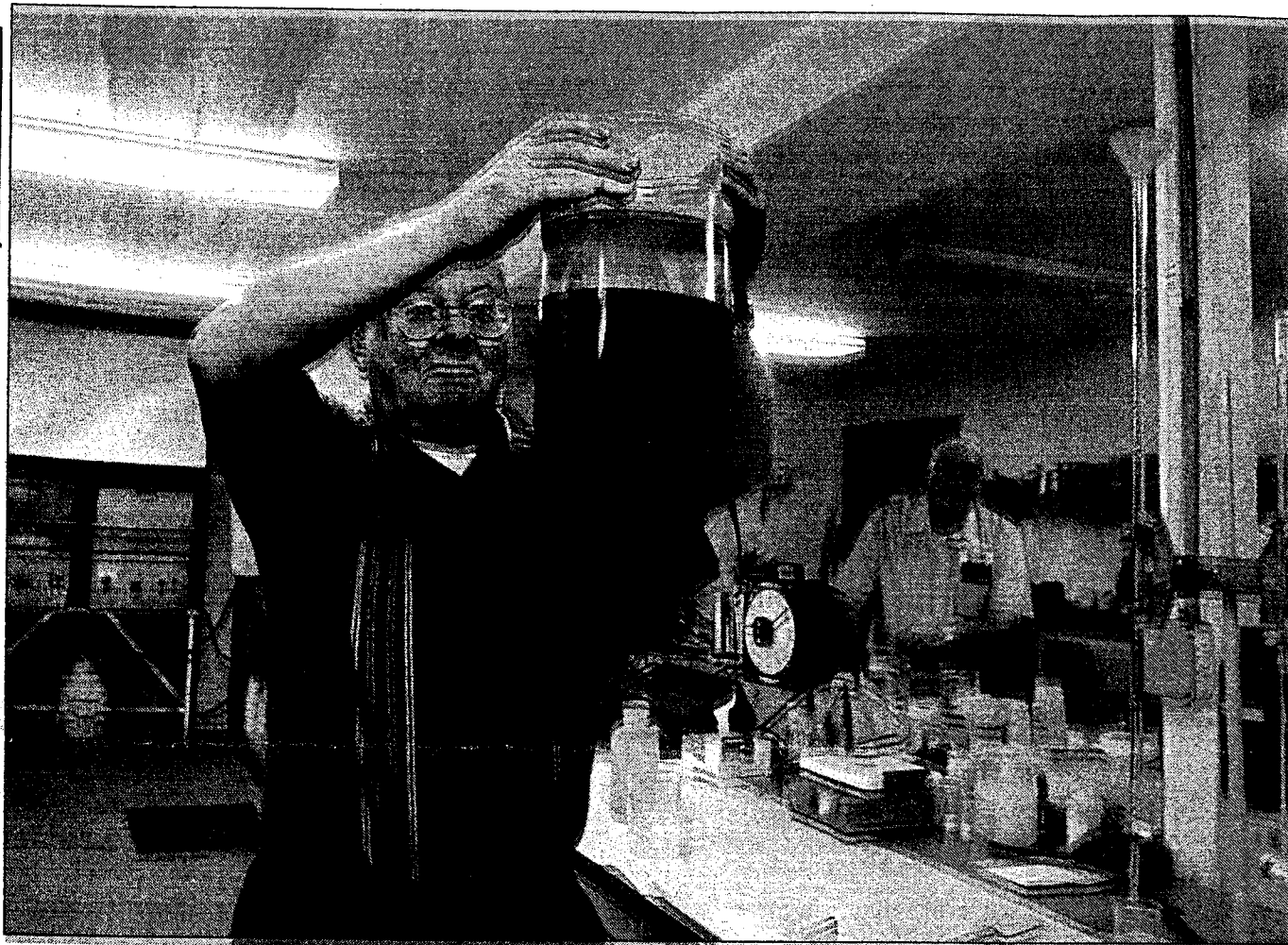


SPIKE DONEGAN of Ion Resolutions carries a vat of water from the Berkeley Pit to a filter during a bench demonstration of a cleanup process he hopes will be used in large scale to clean the toxic water now rising in the Berkeley Pit.

DEREK PRUITT
THE MONTANA STANDARD



Pit's water woes may be solved

By LESLIE MCCARTNEY
of The Montana Standard

VIRGINIA CITY — A small, privately funded group announced Thursday that it has successfully treated Berkeley Pit water to drinking standards and has accomplished four key goals along the way.

Ion Resolutions' representatives told a small group gathered at Moen Builders in Virginia City that they have been able to treat the water, which is laden with heavy metals, to potable standards and illustrated the point by showing fish thriving in the treated water. The people drank a glassful of treated pit water in their demonstration.

"We've kissed a lot of frogs along the way," said Spike Donegan, who helped pioneer the water treatment process and has been working on the problem for more than a decade. Donegan explained that Ion Resolutions had four key criteria in investigating the reclamation of the pit's water and that it had succeeded in meeting all the self-imposed goals.

In addition to producing drinking water, the process employed by Ion Resolutions also results in an acceptable sludge level and it also extracts the marketable copper from the mix. Since the entire process hinges on the ability to treat the water economically, the group feels its treatment costs are within an acceptable range.

"We're very confident of what this will do."

Rick Shafsky, Ion Resolutions

Donegan's partner, Rick Shafsky, said that the group could treat the water at a cost of \$1.70 per 1,000 gallons. Shafsky and Donegan, collectively and individually, have been working on Berkeley Pit reclamation for the past 12 years.

"We're very excited," Shafsky said of the group's findings. He said the process is not an academic study and is ready to be tested in the field. He also said the process can be upscaled using standard mining equipment; no expensive treatment facility would be required.

THE PROCESS — boiled down to its most basic — involves mixing, filtration and proprietary processes that lead to the successful water treatment. The crux of the process is secret and the group plans to patent its work soon.

The Donegan Process — named for Donegan — primarily involves basic inorganic chemistry. Shafsky said that everything used in the process is readily available, widely used and not exotic.

"We're very confident of what this will do," Shafsky added.

Ion Resolutions is composed of Donegan, who holds a degree in mineral dressing engineering; Shafsky, who has broad experience in the development and use of strong oxidation chemistries; Robert Prather, contract metallurgical chemist; and Roy Moen, owner of M & W Milling and Refining and Moen Builders Inc.

"It's a real good team," Shafsky said.

The group has labored on the Berkeley Pit problem without the use of federal or grant money. Shafsky said the group aspired to formulate a process that would be applicable to the real problem.

He expressed dismay that the millions of dollars poured into the problem have not produced any appreciable difference. "For 15 years, it's been basically the same process. There has been some good work done along the way, but it's been studied long enough," he said.

He added that Ion Resolution is particularly keen on seeing the process in action since it doesn't reap any benefits until work is undertaken. "We don't get paid unless we produce," he said.

For Thursday's demonstration, Ion Resolutions also invited people from Montana Resources Inc. and officials with the Montana Bureau of Mines and Geology, who took home samples of Ion Resolutions' work.